

Remarks/Arguments

As of the Office Action mailed June 27, 2006 claims 1-17 are pending in the application. Claim 17 has been withdrawn and claims 1-16 stand rejected. Reexamination and reconsideration are respectfully requested in light of the amendments and remarks/arguments herein.

Amendments to the Claims

Claims 1 and 16 have been amended to recite "said metallic alloy has a coefficient of thermal expansion "Y" greater than 15% of that of said substrate "X"." Support for this amendment may be found in paragraph [0021] of the published application which recites "the thermal expansion of the referenced metallic glass has a higher thermal expansion coefficient than the base substrate material, preferably at least about 15.0% higher." Accordingly, no new matter has been added by this amendment.

Claims 1 and 16 have also been amended to recite "wherein Fe and Cr comprises at least 90 wt % of said metallic alloy, and C is present at levels of about 1.0 wt %, and Mo is present at levels of about 1.0 - 2.0 wt %." Support for this amendment may be found in claim 5 and Table I which illustrates that alloys include about 1.0 wt % of C. No new matter has been entered by this amendment.

Claim 1 has also been amended to recite "wherein said metallic alloy has a hardness of greater than 750 kg/mm²." Support for this amendment may be found in Table 10 and paragraph [0025] of the published application which recites "[w]elds produced using wire stock from Alloy B and Alloy C were found to have unexpectedly high hardnesses of R_c=62 and R_c=65,

respectively ... the Vickers hardness of weld deposits formed from Alloy C and Alloy D provided unexpectedly high, exhibiting values of 950 kg/mm² and of 1100 kg/mm².” A Rockwell C hardness of 62 converts to a Vickers hardness of about 750 kg/mm². No new matter has been entered by this amendment.

In addition, some clerical amendments to claims 1 and 16 were made to clarify the subject matter of the claims.

Claim 6 has also been amended to recite “wherein Fe and Cr comprise at least 90 wt. % of said metallic alloy, and Mo is present at levels of about 1.0 – 2.0 wt. %, and B is present at levels of about 3.0 – 4.0 wt %, W is present at levels of about 1.0 – 2.0 wt %, C is present at levels of about 0.1 – 1.2 wt %, Si is present at levels of 0.1 – 1.0 wt % and Mn is present at levels of 0.1 – 1.0 wt %.” Support for this amendment may be found in Table 1 of the published application and claim 6 as originally presented. No new matter has been added by this amendment. In addition Applicant respectfully asserts that this amendment has rendered the 35 USC §112 rejection moot.

In addition, Claim 13 has been amended to recite “wherein said metallic alloy has a coefficient of thermal expansion in the range of 12 to 17 ppm/°C.” Accordingly, Applicant respectfully asserts that this amendment has rendered the 35 USC 112 rejection moot.

Claims 5, 12 and 14 have been cancelled.

Rejections Under 35 USC §102/103

Claims 1, 10 and 14 have been rejected under 35 USC §102 as being anticipated by Pitcairn et al. As an initial note, the Applicant has amended claim 1 to recite:

“supplying a metallic alloy which has a thermal expansion coefficient “Y”, wherein said metallic alloy has a coefficient of thermal expansion “Y” greater than 15% of that of said substrate “X” and wherein Fe and Cr comprises at least 90 wt % of said metallic alloy, and C is present at levels of about 1.0 wt %, and Mo is present at levels of about 1.0 - 2.0 wt %.”

Pitcairn does not disclose the presently claimed alloy and the difference of greater than 15% in the coefficient of thermal expansion between the metallic alloy and the substrate. Therefore, Applicant respectfully asserts that Pitcairn fails to teach or suggest the presently claimed subject matter.

Claims 1-3, 11 and 14 stand rejected under 35 USC §102(b) as being anticipated by Kloft et al. Kloft, however, requires that between 10-70% of the wear layer must include between 10 to 70% Mo, which is much greater than the claimed range. Col. 3, lines 60-67 and Col. 6, lines 15-29. Accordingly, Kloft fails to teach or suggest the presently claimed subject matter.

Claims 1, 10, 11 and 14-16 stand rejected under 35 USC §102(b) as being anticipated by Keshavan et al. Applicant initially notes that claim 16 has been amended to recite:

“supplying a metallic alloy which has a thermal expansion coefficient “Y”, wherein said metallic alloy has a coefficient of thermal expansion “Y” greater than 15% of that of said substrate “X” and wherein said metallic alloy has a yield strength “Z” and wherein Fe and Cr comprises at least 90 wt % of said metallic alloy, and C is present at levels of about 1.0 wt %, and Mo is present at levels of about 1.0 - 2.0 wt %.”

Keshavan, however, utilizes a tungsten carbide (WC or W₂C) coating, which may also include about 15% of a cobalt binder and does not disclose the presently claimed metallic alloy. Therefore, Keshavan fails to teach or suggest the presently claimed subject matter. Col. 7, lines 24-30; 57-61.

Claims 1-4, 10 and 11 stand rejected under 35 USC §102(b) as being anticipated by Subramanian et al. In addition, claims 7-9 and 13-16 stand rejected under 35 USC §103(a) as being unpatentable over Subramanian.

Applicant notes however that the Examiner has not rejected claim 12. Accordingly, the feature of having the metallic alloy having a thermal expansion coefficient being greater than 15% of the substrate thermal expansion coefficient is not disclosed or suggested in the art and it is believed that claim 1 and 16 are in condition for allowance. Specifically, the Applicant has incorporated the subject matter of claim 12 into claims 1 and 16 to recite that "said metallic alloy has a coefficient of thermal expansion "Y" greater than 15% of that of the base substrate "X"" and also respectfully asserts that the claimed subject matter is not taught or suggested by Subramanian.

In light of the above, Applicant respectfully submits that claims 1 and 16 and their dependent claims are not taught or suggested by the cited references. In consideration of the foregoing Applicant respectfully requests that the rejections of claims 1 and 16 and their depending claims are withdrawn upon reconsideration.

Having overcome all of the outstanding rejections, it is respectfully submitted that the application is now in condition for allowance. Early and favorable action is respectfully solicited.

In the event that there are any fee deficiencies, or additional fees are payable, please charge, or credit any overpayment to, our Deposit Account No. 50-2121.

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Reply to Office Action of June 27, 2006

Respectfully submitted,

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